

Answer All Questions

Q.1 Explain what are the different types of line coding?
Compare between them using data stream 10110001.

Q.2 Draw a circuit diagram to generate PWM and explain its operation.

Q.3.a With the aid of mathematical expressions and block diagram explain the operation theory of linear delta modulation (LDM).

b. Draw a circuit diagram for amplitude shift keying (ASK) and explain its operation.

Q.4.a. Explain an experimental setup to measure the characteristics of log and anti-log amplifiers and sketch the input-output characteristics. Also, show how you can use the circuits above to build an analog amplifier.

b. Explain how you can use the analog multiplier circuit as a squaring circuit and as a modulator.

Q.5 What are the advantages of optical fiber communications?

Q.6.a. What are the conditions of total-internal reflection in optical fiber?

b. Compare between a single-mode and multimode of step-index fiber.

Q.7 What are the two major problems in optical communications? How you can overcome to them?